ICS 91.100.30, 93.100 SLOVENSKÁ TECHNICKÁ NORMA November 2016

STN	**Železnice. Koľaj. Betónové podvaly v koľaji a vo výhybkách. Časť 1: Všeobecné požiadavky.**	**STN EN 13230-1** 72 3040

Railway applications - Track - Concrete sleepers and bearers - Part 1: General requirements

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 10/16

Obsahuje: EN 13230-1:2016

Oznámením tejto normy sa ruší
STN EN 13230-1 (72 3040) z decembra 2009

123585

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13230-1

May 2016

ICS 91.100.30; 93.100

Supersedes EN 13230-1:2009

English Version

Railway applications - Track - Concrete sleepers and bearers - Part 1: General requirements

Applications ferroviaires - Voie - Traverses et supports en béton - Partie 1 : Prescriptions générales

Bahnanwendungen - Oberbau - Gleis- und Weichenschwellen aus Beton - Teil 1: Allgemeine Anforderungen

This European Standard was approved by CEN on 4 March 2016.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 13230-1:2016) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This document supersedes EN 13230-1:2009.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2016, and conflicting national standards shall be withdrawn at the latest by November 2016.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2008/57/EC.

For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document.

This European Standard is one of the EN 13230 series “*Railway applications – Track – Concrete sleepers and bearers*”, which consist of the following parts:

— Part 1: General requirements;

— Part 2: Prestressed monoblock sleepers;

— Part 3: Twin-block reinforced sleepers;

— Part 4: Prestressed bearers for switches and crossings;

— Part 5: Special elements;

— Part 6: Design.

This European Standard is used as the technical basis for transaction between corresponding parties (purchaser – supplier).

Annexes A to F are informative; they can be used as normative requirements by completion of a contract, if agreed by the contracting parties.

The Annex E of EN 13230-1:2009 is deleted and is shifted into EN 13230-6.

There is a change in the wording of the documents of EN 13230 (series) “design bending moment” is replaced by “characteristic bending moment” and “test bending moment”.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This part of the EN 13230 series covers the general requirements for concrete sleepers and bearers and is used in conjunction with the following parts:

— Part 2: Prestressed monoblock sleepers;

— Part 3: Twin-block reinforced sleepers;

— Part 4: Prestressed bearers for switches and crossings;

— Part 5: Special elements;

— Part 6: Design.

Concrete sleepers and bearers are safety critical components for railway applications. They are not covered by any other standards.

As safety critical components, an agreement is needed between purchaser and supplier to operate a factory Quality System.

This position about safety critical relevance has always been highlighted by decisions from CEN/TC 256/SC 1 "*Railway applications / Infrastructure*" and Annex ZA provides detailed information.

1 Scope

This part of the EN 13230 series defines technical criteria and control procedures which need to be satisfied by the constituent materials and the finished concrete sleepers and bearers, i.e.: precast concrete sleepers, twin-block reinforced sleepers, bearers for switches and crossings, and special elements for railway tracks.

The main requirement of concrete sleepers and bearers is the transmission of vertical, lateral and longitudinal loads from the rails to the ballast or other support. In use, they are also exposed to frost damage and to moisture, which can result in detrimental chemical reactions within the sleeper.

In this standard mechanical tests are defined which provide assurance of the capability of sleepers or bearers to resist repetitive loading and provide sufficient durability. In addition, controls are placed on manufacturing processes and tests to ensure that the concrete will not suffer degradation in service through chemical reaction and frost damage.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 206, *Concrete - Specification, performance, production and conformity*

EN 934-2, *Admixtures for concrete, mortar and grout – Part 2: Concrete admixtures – Definitions, requirements, conformity, marking and labelling*

EN 1008, *Mixing water for concrete - Specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete*

EN 10080, *Steel for the reinforcement of concrete - Weldable reinforcing steel - General*

FprEN 10138 (all parts), *Prestressing steels*

EN 12620, *Aggregates for concrete*

EN 13146-5, *Railway applications - Track - Test methods for fastening systems - Part 5: Determination of electrical resistance*

EN 13230-2:2016, *Railway applications – Track – Concrete sleepers and bearers – Part 2: Prestressed monobloc sleepers*

EN 13230-3:2016, *Railway applications – Track – Concrete sleepers and bearers – Part 3: Twin-block reinforced sleepers*

EN 13230-4:2016, *Railway applications – Track – Concrete sleepers and bearers – Part 4: Prestressed bearers for switches and crossings*

prEN 13230-6:2015, *Railway applications – Track – Concrete sleepers and bearers – Part 6: Design*

EN 13481-2, *Railway applications - Track - Performance requirements for fastening systems - Part 2: Fastening systems for concrete sleepers*

EN 13481-5, *Railway applications - Track - Performance requirements for fastening systems - Part 5: Fastening systems for slab track with rail on the surface or rail embedded in a channel*

EN 13481-7, *Railway applications - Track - Performance requirements for fastening systems - Part 7: Special fastening systems for switches and crossings and check rails*